

EXHIBIT D

Figure 1A.
Comparison of deduced amino acid sequences
of CBHs heavy chain genes with ID 1

		CDR 1					CDR 2				
		1	10	20	30	40	50	60	70	71	
heavy chain seq ID 1	(1)	EVQLLEQSGAEVRKPGSSVKVSC	KASGGT	FSGHVTTWVRQAPGQGLEWMGES	IFPGS	ANYAQN	YAK	GRD			
CBH-4B	(1)	---ITVQSGAEVRKPGSSVKVSC	KASGGSGT	YGTITWVRQAPGQGLEWMGGIVP	---	LFDR	PNYAQ	KFPQD			
CBH-4D	(1)	--QVQVQSGAEVRKPGSSVKVSC	KASGGPEN	---YSWVRQAPGQGLEWMGGII	---	FDREN	YAQ	KFPQD			
CBH-4G	(1)	--QVQVQSGAEVRKPGSSVKVSC	KASGGTFN	--SASWVRQAPGQGLEWMGGIIP	---	IFATT	YYAQR	LQG			
CBH-5	(1)	--QVQVQSGAEVRKPGSSVKVSC	KATGGKFN	--FISWVRQVPGQGLEWMGGVVF	---	VFGGS	SYPO	KFPQD			
CBH-7	(1)	--QVQVQSGAEVRKPGSSVKVSC	KASGGTFN	--SASWVRQAPGQGLEWMGGIIP	---	IFATT	YYAQR	LQG			
CBH-8C	(1)	--QVQVQSGAEVRKPGSSVKVSC	KASGGTFN	--SASWVRQAPGQGLEWMGGIIP	---	IFATT	YYAQR	LQG			
CBH-8E	(1)	--QVQVQSGAEVRKPGSSVKVSC	KASGGTFN	--SASWVRQAPGQGLEWMGGIIP	---	IFATT	YYAQR	LQG			
CBH-11	(1)	--QVQVQSGAEVRKPGSSVKVSC	KASGGNIN	--TYSWVRQAPGQGLEWMGGIIP	---	FTAKS	---	QFQD			
CBH-17C	(1)	--EVQVEGGAVQ---	GGSLKVS	CAASGPFVSGSATHWVRQAP	--KGLD	WVGIR	SS---	SHNYATE	XPVSV	RG	
Consensus	(1)	EVQLLEQSGAEVRKPGSSVKVSC	KASGGT	FSGHVTTWVRQAPGQGLEWMGES	IFPGS	ANYAQN	YAK	GRD			

		CDR 3									
		72	80	90	100	110	120	130	135		
heavy chain seq ID 1	(72)	PVSTILADESTSTSFTELSNLR	SDDTAVYY	CARDP	PER---	YCSAGRCY	PGFFQ	QWGG	QGLVTVSS		
CBH-4B	(55)	RVATADES--TSTAYMELSSLR	FDIT--	AYCARE	ADI---	VVGGSS	SYFDS	---	---		
CBH-4D	(61)	RVITMTADESTNTHYMESGLR	SECTA--	VYYCARD	SGD	FGAVI	IGNH	YYYGM	DMV---		
CBH-4G	(64)	RVTTTADETS--TAYMELSSLQ	SDDTAVYY	CKATG	CG--	LELHGS	YYYYA	MDV---	---		
CBH-5	(66)	RLITADDSR-----	SYMLSGR	UDTAVYY	CARPHG	D---SS--	GIYRR	PLDY	---		
CBH-7	(64)	RVTTTADDSN---	LMDSSLR	SEDS---	AYCARG	---	YTYGS	FFDY	---		
CBH-8C	(61)	RVITTSKQFS-----	LKNSVT	AADTAVYY	CARG	---	LIAAR	LLDYW	---		
CBH-8E	(64)	RLTTTADS--TSTGYMELSSLR	SEDT--	AYCARE	CWLG--	SCRGG	SCYSA	FDI	---		
CBH-11	(60)	RVTTADKSTGD---	Y-MSSLK	SDDTAVYY	CARVPGS	---	GT--	YAYFDY	---		
CBH-17C	(63)	RPTISRDDSR--TAYLQMSR	TEDTALYCI	IPSGLVG	---	QLGHAF	EF	---	---		
Consensus	(72)	RVSTILADESTSTSFTELSNLR	SDDTAVYY	CARDP	PER	YCSAGRCY	PGFFQ	QWGG	QGLVTVSS		

Note:

Identical sequence: yellow background and red foreground.

Conservative sequence: light green background and blue foreground

Figure 1B.
Comparison of deduced amino acid sequences
of CBHs heavy chain genes with ID 1

CDR 1	
(1)	1 8
HCV heavy seq ID 1 CDR 1(1)	---GHVTI
CBH 4B heavy CDR 1(1)	---TYGII
CBH 4D heavy CDR 1(1)	----YS--
CBH 4G heavy CDR 1(1)	NSAS----
CBH 5 heavy CDR 1(1)	NFIS----
CBH 7 heavy CDR 1(1)	---NYALS
CBH 8C heavy CDR 1(1)	---SFFW-
CBH 8E heavy CDR 1(1)	---SQFTI
CBH 11 heavy CDR 1(1)	---IYS--
CBH 17 heavy CDR 1(1)	GSATH---
Consensus (1)	GHVTI

CDR 2	
(1)	1 10 21
HCV heavy seq ID 1 CDR2	(1) ESIFIFGSANYACNYACKFRD
CBH 4B heavy CDR 2	(1) GIVELFDRFNIAKFKC----
CBH 4D heavy CDR 2	(1) --GLIFDRENIAKFKCG----
CBH 4G heavy CDR 2	(1) -IIFIFATTIYAQRLQG----
CBH 5 heavy CDR 2	(1) GVVEFVEGGGSYFCKFCG----
CBH 7 heavy CDR 2	(1) -ETIFFGIEKYAKFKCG----
CBH 8C heavy CDR 2	(1) -YMSLTIGNINSSSLKT-----
CBH 8E heavy CDR 2	(1) --FIFIFTINIAKFKCG----
CBH 11 heavy CDR 2	(1) -IIFFTIAKSCFCG-----
CBH 17C heavy CDR 2	(1) ---IRSSSHNYATEYFVSVRG
Consensus	(1) ESIFIFGSANYACNYACKFRD

CDR 3	
(1)	1 10 21
HCV heavy seq ID 1 CDR 3	(1) ---LFFRYCSAGRCYEGFFQC
CBH 4B heavy CDR3	(1) ----EADIVVGGSSYFCS---
CBH 4D heavy CDR 3	(1) LSGELFGAVIIGNHYYGMLV-
CBH 4G heavy CDR 3	(1) -ATGQGIELHGSYYYVAMLV-
CBH 5 heavy CDR 3	(1) -FHGLSSGIYRRFLDY-----
CBH 7 heavy CDR 3	(1) -----RGYIYGSEFDY-----
CBH 8C heavy CDR 3	(1) -----GLIAARLLDYW-----
CBH 8E heavy CDR 3	(1) ---DWLGSCRGGSCYSAFDI-
CBH 11 heavy CDR 3	(1) -----VPGSGTYAYFDY-
CBH 17C heavy CDR 3	(1) -----PSGLVGQLGHAFEP--
Consensus	(1) LFFRYCSAGRCYEGFFQC

Figure 2A.
Comparison of deduced amino acid sequences
of CBHs heavy chain genes with ID 2

CDR 1

CDR 2

	(X) 1	20	30	40	50	60	75
heavy chain seq ID 2	(1)	EVQLLEQSGAEVKKFGSSSVKVSQCVFGDTFSRYTLCWLRCAPOGGFEWKNILFVYNTF	NYAOKFQGRISTAD				
CBH-4B	(1)	---IIVCQSGAEVKKFGSSSVKVSCKASGGSFGITWVRCAPOGGLEWVGIVELFLRF	NYAOKFQGRV-AIAD				
CBH-4D	(1)	---CVCVCQSGAEVKKFGSSSVKVSCKASGGFEN	---YSWVRCAPOGGLEWVGII-FERE	NYAOKFQGRVIMLAD			
CBH-4G	(1)	---CVCVCQSGAEVKKFGSSSVKVSCKASGGTFEN	---SASWVRCAPOGGLEWVG-ILFIFATI	---YYAOKFQGRVITLAD			
CBH-5	(1)	---CVCVCQSGAEVKKFGSSSVKVSCKATGGKFSN	---FLSWVRCAPOGGLEWVGIVVVFVGG	---GSYPCKFQGRITLAD			
CBH-7	(1)	---CVCVCQSGAEVKKFGS-SVLSCKS	---GGTFNNYALSWVRCAPOGGLEWVGIIFFGIE	---KYAOKFQGRVITLAD			
CBH-8C	(1)	---CVCVCQSGFLVKFSEILSLTCTVSGGSISS	---FFWVIRCAPOGGLEWVGIVMSTTGMIN	---SSLKTRVITLISK			
CBH-8E	(1)	---CVCVCQSGAEVKKFGSSSVKVSCKASGGTFENSCFTTWVRCAPOGGLEWVG	---FIFIFII	---NYAOKFQGRITLAD	---TTTA		
CBH-11	(1)	---CVCVCQSGAEVKKFGSSSVKVSCKASGGNIN	---IYSWVRCAPOGGLEWVG-ILFFIAK	---S	---CFQGRVITLAD		
CBH-17C	(1)	---SVQVEGGAVC	---GGSLKVSAAAGFVFGSATHWVRCAF	---KGLDWVTRSSSHNYATEYFVSVRGRFTLSRD			
Consensus	(1)	EVQLLEQSGAEVKKFGSSSVKVSQCVFGDTFSRYTLCWLRCAPOGGFEWKNILFVYNTF	NYAOKFQGRISTAD				

CDR 3

	(76) 76	90	100	110	128
heavy chain seq ID 2	(75)	DSTSTAYMELSSLRSED	TAVYFCARVVIPNAIRHMGYFDYWGQGITLVTVSS		
CBH-4B	(71)	ESTSTAYMELSSLRFDDTAYCAREADIVVGS	---SYFDS		
CBH-4D	(68)	ESTINH-YMESGLRSED	TAVYFCARDSGDFGA-VLIGNHYHYGMDV	---	
CBH-4G	(71)	ETS-TAYMELSSLQSDDTAYYCKAT-G	---QGLELHGSIYYVYAMDV	---	
CBH-5	(72)	DSR	---SYMLSGRDDTAYYCARPHGD-SS	---GIYRPLDY	---
CBH-7	(71)	ESN	---LMDSSLRSED	---AYCARG	---YTYGSPFDY
CBH-8C	(68)	QFS	---LRNSVTAADTAVYFCARG	---	---LIAARLLDYW
CBH-8E	(70)	DSTSTAYMELSSLRSED	TAVYFCARDWLGSCRGG-SCYSAFDI	---	
CBH-11	(66)	KSTGD	---YMSLKSDDTAVYFCARVPGS-GT	---YAYFDY	---
CBH-17C	(70)	DSR	---TAYLQINSRTEDTALYCIIPS	---	---GLVGQLGHAFEF
Consensus	(76)	DSTSTAYMELSSLRSED	TAVYFCARVVIPNAIRHMGYFDYWGQGITLVTVSS		

Note:

Identical sequence: yellow background and red foreground.

Conservative sequence: light green background and blue foreground

Figure 2B.
Comparison of deduced amino acid sequences
of CBHs heavy chain genes with ID 2

CDR 1

	(1)	<u>1</u>	<u>8</u>
HCV heavy seq ID 2 CDR 1 (1)	---	RYT	IQ
CBH 4B heavy CDR 1 (1)	---	TYG	IT
CBH 4D heavy CDR 1 (1)	----	YS	--
CBH 4G heavy CDR 1 (1)	NSAS	----	
CBH 5 heavy CDR 1 (1)	NFIS	----	
CBH 7 heavy CDR 1 (1)	NYALS	---	
CBH 8C heavy CDR 1 (1)	-SFFW	---	
CBH 8E heavy CDR 1 (1)	----	SQPI	IT
CBH 11 heavy CDR 1 (1)	----	IYS	--
CBH 17 heavy CDR 1 (1)	GSATH	---	
Consensus (1)		RYT	IQ

CDR 2

	(1)	<u>1</u>	<u>10</u>	<u>21</u>
HCV heavy seq ID 2 CDR 2	(1)	NIIFVYNIEN	YACKFQG	----
CBH 4B heavy CDR 2	(1)	GIVFLFLRE	NYACKFCT	----
CBH 4D heavy CDR 2	(1)	--GIIFLRE	NYACKFQG	----
CBH 4G heavy CDR 2	(1)	-IIFIFATT	YVACRLQG	----
CBH 5 heavy CDR 2	(1)	GVVFVFGG	GSYPCKFQG	----
CBH 7 heavy CDR 2	(1)	-ETIFFGT	EKYACKFQG	----
CBH 8C heavy CDR 2	(1)	-YMSLTIGN	INSSSLRT	-----
CBH 8E heavy CDR 2	(1)	--FIFIFT	NIYACKFQG	----
CBH 11 heavy CDR 2	(1)	-LIFFIAR	SCFQG	-----
CBH 17C heavy CDR 2	(1)	----IRSS	SHNYATEYFVSVRG	
Consensus (1)		NIIFVYNIEN	YACKFQG	

CDR 3

	(1)	<u>1</u>	<u>10</u>	<u>21</u>
HCV heavy seq ID 2 CDR 3	(1)	---	VVIENAIRHT	MGYYFLY-
CBH 4B heavy CDR3	(1)	---	EALIVVGS	---SYFLS-
CBH 4D heavy CDR 3	(1)	LSGLFGAV	ITIGNHYYY	GMV-
CBH 4G heavy CDR 3	(1)	-ATGCGT	IELHGSYYYY	AMV-
CBH 5 heavy CDR 3	(1)	-----	PHGLSSG	IYRRFLY-
CBH 7 heavy CDR 3	(1)	-----	RGYIYG	SFFLY-
CBH 8C heavy CDR 3	(1)	-----	GLIAAR	LILY-
CBH 8E heavy CDR 3	(1)	---	DWLGSCRGG	SCYSAFLI-
CBH 11 heavy CDR 3	(1)	-----	VFGSGT	YAYFLY-
CBH 17C heavy CDR 3	(1)	-----	FSGLVG	QLGHAFEP--
Consensus (1)			VVIENAIRHT	MGYYFLY

Figure 3A.
Comparison of deduced amino acid sequences
of CBHs heavy chain genes with ID 3

		CDR 1					CDR 2		
	(1)	1	10	20	30	40	50	68	
heavy chain seq ID 3	(1)	EVQLLEQSGAEVKKFGSSVVKVSC						KASGGTIFSGEVLISWVRCAFGQGLEWMGGS	ISFPGTISNSAQKFGQ
CBH-4B	(1)	---ILVCSGAEVKKFGSSVVKVSCRASGGSFGLTYGTTWVRCAFGQGLEWVGSI						VELFLRENYACKKFGQ	
CBH-4D	(1)	--CVCVCSGTEVKKFGSSVVKVSC						KASGGFFN---YSWVRCAFGQGLEWMG-G-II-FLRENYACKKFGQ	
CBH-4G	(1)	-CVCVCSGAEVKKFGSSVVKVSCRASGGTIFEN						--SASWVRCAFGQGLEWMG-I-IFIFATTIYYACRLQG	
CBH-5	(1)	-CVCVCSGAEVKKFGSSVVKVSCRATGGKFSN						-FISWVRCAFGQGLEWMGGV-VEVFGGGSYPCKKFGQ	
CBH-7	(1)	-CVCVCSGAEVKKFGS-SVISCKS-GGIFNNYALSWVRCAFGQGLEWMG-E						-ITTFGTETKYACKKFGQ	
CBH-8C	(1)	--CVCVCSGELVKESEILSLICTVSGGSISS						--FFWVIRCPGKGLEWIG----	YMSLTGNTNSLKT
CBH-8E	(1)	--CVCVCSGAEVKKFGSSVVKVSCRASGGTENSQFITWVRCAFGQGLEWMG						---	FIFIPTIINYACKKFGQ
CBH-11	(1)	-CVCVCSGAEVKKFGSSVVKVSCRASGGNIN						--TVSWVRCAFGQGLEWMG-I-IFFLAKS----	CPQG
CBH-17C	(1)	--EVQVEGGAVQ----						GGSLKVSCAASCFVFGSALEWVRCAE-KGLDWGIRSSSHNYATEYFVSVRG	
Consensus	(1)	EVQLLEQSGAEVKKFGSSVVKVSC						KASGGTIFSGEVLISWVRCAFGQGLEWMGGS	ISFPGTISNSAQKFGQ

		CDR 3							
	(69)	69	80	90	100	110	120	132	
heavy chain seq ID 3	(68)	RVSITADESASTAYMELSSLRSEDTATYYCAKDPPR	---	FCSGGNCYPGFFQQNGQGLTVTVSS					
CBH-4B	(65)	RVATADES-TSTAYMELSSLRFDDT	--AYCAREADI	---	VVGGSYFDS	-----			
CBH-4D	(61)	RVTMTADESINTHYMESGLRSEDTA	-VYYCARDSGDFGAVTIIGNHYYYGMV	-----					
CBH-4G	(64)	RVTMTADETS-TAYMELSSLQSDDTATYYCKATGQG	--LELHGSYYYVAMDV	-----					
CBH-5	(66)	RLITADDSR	---	SYMLSGRDTTAYYCARPHGD	---	S	SGIYRRELDY	-----	
CBH-7	(64)	RVTITADESN	---	LMDSSLRSEDS	--AYCARG	---	YTYGSPFDY	-----	
CBH-8C	(61)	RVIDISKQFS	---	LKNSVTAALTAIVVYCARG	---	LIAARLLEYW	-----		
CBH-8E	(64)	RLITITADS-TSTGYMELSSLRSEDT	-AYYCARDWLG	---	SCRGGSCYSAFDI	-----			
CBH-11	(60)	RVTITADKSTGD	---	YMSSLKSDDTAVVYCARVFGS	---	G	TYAYFDY	-----	
CBH-17C	(63)	RFTISRDDSR-TAYLQMSRTEDTALYCLIPSGLVG	---	QLGHAFEF	-----				
Consensus	(69)	RVSITADESASTAYMELSSLRSEDTATYYCAKDPPR	---	FCSGGNCYPGFFQQNGQGLTVTVSS					

Note:

Identical sequence: yellow background and red foreground.

Conservative sequence: light green background and blue foreground

Figure 3B.
Comparison of deduced amino acid sequences
of CBHs heavy chain genes with ID 3

CDR 1	
(1)	1 8
HCV heavy seq ID 3 CDR 1(1)	GHVIS---
CBH 4B heavy CDR 1(1)	---TYGII
CBH 4D heavy CDR 1(1)	----YS--
CBH 4G heavy CDR 1(1)	NSAS----
CBH 5 heavy CDR 1(1)	NFIS----
CBH 7 heavy CDR 1(1)	NYALS---
CBH 8C heavy CDR 1(1)	-SFFW---
CBH 8E heavy CDR 1(1)	---SCFTI
CBH 11 heavy CDR 1(1)	---IYS--
CBH 17 heavy CDR 1(1)	GSATH---
Consensus(1) GHVIS	

CDR 2	
(1)	1 18
HCV heavy seq ID 3 CDR 2 (1)	-GSISFFGTSSNSACKFQG
CBH 4B heavy CDR 2 (1)	-GIVFLFDRPNYACKFQD
CBH 4D heavy CDR 2 (1)	---GIIFDRENYACKFQG
CBH 4G heavy CDR 2 (1)	--IPIFATTYYAQRLOG
CBH 5 heavy CDR 2 (1)	-GVVFVFGGGSYPQKFQG
CBH 7 heavy CDR 2 (1)	--ETIPFGIEKYACKFQG
CBH 8C heavy CDR 2 (1)	--YMSDTGNINSSLKT--
CBH 8E heavy CDR 2 (1)	---FIPIFTTNYACKFQG
CBH 11 heavy CDR 2 (1)	-----IIPFTAKSQFQG
CBH 17C heavy CDR 2 (1)	IRSSSHNYATEYPVSVRG
Consensus (1) GSISFFGTSSNSACKFQG	

CDR 3	
(1)	1 10 21
HCV heavy seq ID 3 CDR 3 (1)	---DFFRFCSGGNCYFGFFQC
CBH 4B heavy CDR 3 (1)	---EADIVVGGSSYFDS----
CBH 4D heavy CDR 3 (1)	DSGLFGAVIIGNHYYYGMLV-
CBH 4G heavy CDR 3 (1)	-ATGQGIELHGSYYYYAMLV-
CBH 5 heavy CDR 3 (1)	-----FHGLSSGIYRFLDY-
CBH 7 heavy CDR 3 (1)	-----RGYIYGSFFLY-
CBH 8C heavy CDR 3 (1)	-----GLTAARLLDYW
CBH 8E heavy CDR 3 (1)	---LWLGSCRGGSCYSAFDI-
CBH 11 heavy CDR 3 (1)	-----VEGSGIYAYFDY-
CBH 17C heavy CDR 3 (1)	-----PSGLVGCIGHAFEF-
Consensus (1) DFFRFCSGGNCYFGFFQC	

Figure 4A.
Comparison of deduced amino acid sequences
of CBHs heavy chain genes with ID 4

		CDR 1					CDR 2	
		(1) 1	10	20	30	40	50	67
heavy chain seq ID 4	(1)	EVQLLES	GGGVVQ	FGRLRL	SCAASG	FTFKTYGM	HWRCAP	FGKGL
CBH-4B	(1)	--ILVQ	SGAEVKK	PGSSVK	VSCKAS	GGSGFI	YGITWV	RCAF
CBH-4D	(1)	-QVQV	QSGIEV	KKPGSS	VKVSCK	ASGGPF	N--YSW	VRCA
CBH-4G	(1)	CVQV	QSGAEV	KKPGSS	VKVSCK	ASGGIF	SN--SAS	WVCA
CBH-5	(1)	CVQV	QSGAEV	KKPGSS	VKVSCK	ATGGKPF	SN--FIS	WVRQ
CBH-7	(1)	CVQV	QSGAEV	KKPGSS	-SVISCK	-GGIFAN	YALSW	VRCA
CBH-8C	(1)	CVQL	QESGF	-LVKGS	ETLSLT	CTVSGGS	ISS--FFW	NRQ
CBH-8E	(1)	-QVQV	QSGAEV	KKPGSS	VKVSCK	ASGGIF	NSQFIT	WRCAP
CBH 11	(1)	CVQV	QSGAEV	KKPGSS	VKVSCK	ASGGNL	N--IYS	WRCAP
CBH-17C	(1)	-EVQV	BGGAV	C---GG	SLKVS	CAASGF	VPFSG	SAIHW
Consensus	(1)	EVQLLES	GGGVVQ	FGRLRL	SCAASG	FTFKTYGM	HWRCAP	FGKGL

		CDR 3				
		(68) 68	80	90	100	110
heavy chain seq ID 4	(67)	RFTVSR	DN	SRDTVF	LQMSSL	RLEDTAV
CBH-4B	(65)	RVATAD	ESTST	-AYMEL	SSLR	EDCTAY
CBH-4D	(61)	RVIMTA	DESIN	-THMES	GLRSE	LTA
CBH-4G	(64)	RVITTA	DETST	-AYMEL	SSLR	QSDCTA
CBH-5	(66)	RLTTAD	DSR---	SYML	SGR	EDTAY
CBH-7	(64)	RVITTA	DESIN	---LMD	SSLR	SEES
CBH-8C	(61)	RVITDT	SKQFS	---LKN	SVTA	ACTAV
CBH-8E	(64)	RLTTAD	STST	-GYMEL	SSLR	SELTAY
CBH 11	(60)	RVITAD	KSTGD	---YM	SSLR	SDTAV
CBH-17C	(63)	RFTISR	EDSRT	---AYL	QMSR	TECTAL
Consensus	(68)	RFTVSR	DN	SRDTVF	LQMSSL	RLEDTAV

Note:

Identical sequence: yellow background and red foreground.

Conservative sequence: light green background and blue foreground

Figure 4B.
Comparison of deduced amino acid sequences
of CBHs heavy chain genes with ID 4

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                                CDR 1
                                (1) 1      5
HCV heavy seq ID 4 CDR 1(1) TYGMH
CBH 4B heavy CDR 1(1) TYGIT
CBH 4D heavy CDR 1(1) -YS--
CBH 4G heavy CDR 1(1) NSAS-
CBH 5 heavy CDR 1(1) NFIS-
CBH 7 heavy CDR 1(1) NYALS
CBH 8C heavy CDR 1(1) SFFW-
CBH 8E heavy CDR 1(1) SQPIT
CBH 11 heavy CDR 1(1) IYS--
CBH 17 heavy CDR 1(1) GSATH
                                Consensus (1) TYGMH

                                CDR 2
                                (1) 1      18
HCV heavy seq ID 4 CDR 2 (1) -GISFDGSNYYADSVKG
CBH 4B heavy CDR 2 (1) -GIVFLFDRENYYACKFQD
CBH 4D heavy CDR 2 (1) ---GIIFLDRENYYACKFQG
CBH 4G heavy CDR 2 (1) --IIFIIFATTYYACRLQG
CBH 5 heavy CDR 2 (1) -GVVPVFVGGGSSYPCKFQG
CBH 7 heavy CDR 2 (1) --ETIFFGTEKYACKFQG
CBH 8C heavy CDR 2 (1) --YMSCTGNINSSSLKT--
CBH 8E heavy CDR 2 (1) ---FIPIFTTINYACKFQG
CBH 11 heavy CDR 2 (1) -----IIFFLAKSQFQG
CBH 17C heavy CDR 2 (1) IRSSSHNYATEYFVSVRG
                                Consensus (1) GISFDGSNYYADSVKG

                                CDR 3
                                (1) 1      10      20
HCV heavy seq ID 4 CDR 3 (1) -EGSFFGSIKGRYYLEN---
CBH 4B heavy CDR3 (1) ----EALIVVGCSSYFLS---
CBH 4D heavy CDR 3 (1) ESGIFGAVIIGNHYYYGMIV
CBH 4G heavy CDR 3 (1) -ATGQGIEFHGSYYYYAMIV
CBH 5 heavy CDR 3 (1) -FHGDCSSGIYRREFLY----
CBH 7 heavy CDR 3 (1) -----RGYIYGSEFLY----
CBH 8C heavy CDR 3 (1) -----GLIAARLLIYW---
CBH 8E heavy CDR 3 (1) ---DWLGSCRGGSCYSAFLI
CBH 11 heavy CDR 3 (1) -----VFGSGIYAYFLY
CBH 17C heavy CDR 3 (1) --PSGLVGCLGHAFEF----
                                Consensus (1) EGSFFGSIKGRYYLEN

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Figure 5A.
Comparison of deduced amino acid sequences
of CBHs light chain genes with ID 5

	CDR 1					CDR 2	
	(1)	10	20	30	40		59
light chain seq ID 5	(1)	-AELTQSPGTL	SLSPGERATL	SCRASQSVSSN	--YLA	WYQORPGQ	APRLLTYGASSRAT
CBH 2 light	(1)	EIVLTQSPGTL	-LSPGERATL	SCRASQSVLG	---	YLA	WYKQKPGQAPRLLTYGVS-RAT
CBH 4 B light	(1)	--ESVTQSGT	LSLSPGERATL	SCRASQSVSST	--YVA	WYQKPGQAPR	-LIYDASIRAT
CBH 4 D light	(1)	-QSALTQFAS	VSGSPGQSITL	SCTGTSSDIGGYNFV	SWYQYPDKAFV	--VIX	EVSKRPS
CBH 4 G light	(1)	DIQMTQSPSSI	SASVGDRTIT	CRASQSIDN	---	FLA	WYQKPGKVPKLLTYAASSLQS
CBH 5 light	(1)	DIQMTQSPSTL	SASG-DRVAIT	CRASQSSWL	----	AWY	QKPGAPL--LITKASNVQD
CBH 7 light	(1)	DVLTQSPSSL	SASVGDRTIT	CRSQSISSE	---	LNW	YQKPGKAP-LLISAASSLQS
CBH 8 C light	(1)	EIVLTQSPATL	SLSPGERATL	SCRASQSTSR	---	YLA	WYQKPGQAPRLLTFDTSNRAT
CBH 8 E light	(1)	DIQMTQSPSSL	SSVG--DVTIT	CRASQTINR	---	YLN	WYQKPGKAPKLLTYAASSLQS
CBH 11 light	(1)	DIQMTQSPSTL	-SSVGDRTIT	CRASQINL	---	WLA	WYQOP--KAPELLTYKTSTSES
CBH 17 light	(1)	--SYVLTQTFV	SVAPGKTARIT	CREPNIGINS	---	VHW	FQORPGQAPVSTIYDDR--PS
Consensus	(1)	AELTQSPGTL	SLSPGERATL	SCRASQSVSSN		YLA	WYQORPGQAPRLLTYGASSRAT

	CDR 3					
	(60)	60	70	80	90	112
light chain seq ID 5	(57)	GIPDRFSGSGSG	IDFTLTISRLEPED	FAVYYCQLYG	--NSR	WTFGQGTEKVEIK
CBH 2 light	(55)	GIPDRFSGSGSG	IDFTLTISRLEPED	FA--YVCQQYG	--TSP	FTFG-----
CBH 4 B light	(55)	GVELDRFSGGSG	IDFTLTISRLEPED	FAVYYCQQYG	---	GSPFTEGG-----
CBH 4 D light	(57)	GVSNRFSAS-	SGNTASLTISGL	CAEDEADYYC	SSYTNITPVI	TEGG-----
CBH 4 G light	(57)	GVPSRFSGSGSG	IDFTLTISSLQPEL	VATYYCCKYN	--SAP	FTFGP-----
CBH 5 light	(52)	GV---	SRPSGSGSGTFTLTIS	-LQPDDEATYYCQY	YN--NFS	GTFGQ-----
CBH 7 light	(55)	GV-SRPSGSGSGT	FTLTISSLQPEL	FAVYYCQQSY	--SP	LLTEGG-----
CBH 8 C light	(57)	GIPARFSGSGSG	IDFTLTISNLEPED	FAVYYCQQR	SNWPPALTF	GG-----
CBH 8 E light	(55)	GV-SRFSGSGSG	IDFTLTISSLQ	-DFATYYCQ	QSFSTSAM	YTFGQ-----
CBH 11 light	(54)	GVPSRPSGS	-GSTFTLTISSLQ	-DFATYYCQ	HYS--SSS	WTFGQ-----
CBH 17 light	(53)	GIPERFGSA-	SGDTATLTISR	VEVGDEADY	SCQVWNNIN	NHRRGSSEL-----
Consensus	(60)	GIPDRFSGSGSG	IDFTLTISRLEPED	FAVYYCQLYG		NSRWTFGQGTEKVEIK

Note:

Identical sequence: yellow background and red foreground.

Conservative sequence: light green background and blue foreground

Figure 5B.
Comparison of deduced amino acid sequences
of CBHs light chain genes with ID 5

CDR 1

	(1)	<u>1</u>	<u>14</u>
light chain seq ID 5 CDR 1	(1)	-RASQSVSSNYLA-	
CBH 2 light CDR 1	(1)	-RASQRVLGYLE--	
CBH 4B light CDR 1	(1)	-RASQSVSSITYVA-	
CBH 4D light CDR 1	(1)	TGTSSDIGGYNFVS	
CBH 4G light CDR 1	(1)	-RASQGIDNFLA--	
CBH 5 light CDR 1	(1)	-RASQSSWLA----	
CBH 7 light CDR 1	(1)	--RSQSISSEFLN--	
CBH 8C light CDR 1	(1)	-RASQSISRYLE--	
CBH 8E light CDR 1	(1)	-RASQTINRYLN--	
CBH 11 light CDR 1	(1)	-RASQSINLWLA--	
CBH 17 light CDR 1	(1)	--REFNIGTINSVH-	
Consensus (1)		RASQSVSSNYLA	

CDR 2

	(1)	<u>1</u>	<u>9</u>
light chain seq ID 5 CDR 2	(1)	-YGASSRAT	
CBH 2 light CDR 2	(1)	---GVSRA	
CBH 4B light CDR 2	(1)	--DASIRAT	
CBH 4D light CDR 2	(1)	--EVSKRPS	
CBH 4G light CDR 2	(1)	--AASSLQS	
CBH 5 light CDR 1	(1)	RASQSSWLA	
CBH 7 light CDR 2	(1)	--AASSLQS	
CBH 8C light CDR 2	(1)	--DTSNRAT	
CBH 8E light CDR 2	(1)	--AASSLQS	
CBH 11 light CDR 2	(1)	--KTSTSES	
CBH 17 light CDR 2	(1)	---YDDRPS	
Consensus (1)		YGASSRAT	

CDR 3

	(1)	<u>1</u>	<u>17</u>
light chain seq ID 5 CDR 3	(1)	--QLYGNSRWT-----	
CBH 2 light CDR 3	(1)	--QQYGTSPFTFG----	
CBH 4B light CDR 3	(1)	--QQYGGSPFFGG----	
CBH 4D light CDR 3	(1)	SSYTNNITPVIFGG---	
CBH 4G light CDR 3	(1)	--QKYNAPFTFGP---	
CBH 5 light CDR 3	(1)	--QYNNFSGIFGQ----	
CBH 7 light CDR 3	(1)	--QSYSPLITFGG----	
CBH 8C light CDR 3	(1)	QQRSNWPPALTFGG---	
CBH 8E light CDR 3	(1)	QQSFSTSAMYPFGQ----	
CBH 11 light CDR 3	(1)	--QHYSSSSWTFGQ----	
CBH 17 light CDR 3	(1)	--QVNNNNHNRGSSEL	
Consensus (1)		QLYGNSRWT	

Figure 6A.
Comparison of deduced amino acid sequences
of CBHs Light chain genes with ID 6

	CDR 1					CDR 2	
	(1)	10	20	30	40		59
light chain seq ID 6	(1)	-AELTQSPATLSLSPGERATLSCRASQ---	SVNKYLAWYQOKPGQAPRLLIYDASNRAT				
CBH 2 light	(1)	EIVLTQSPGTL-LSPGERATLSCRASQ---	RVLGYLAWYQOKPGQAPRLLIYGVSRAT				
CBH 4 B light	(1)	--ESVTQSGTILSLSPGERATLSCRASQS--	VSSTYVAVWYQOKPGQAPR-LIYDASIRAT				
CBH 4 D light	(1)	-QSALTQSPASVSGSPGQSITITSCITGSSDIGGYNFVSWYQYEDKAPV--	VIYEVSKRPS				
CBH 4 G light	(1)	DIQMTQSPSSLASVGDRTITCRASQ---	GIDNFLAWYQOKPGKVPKLLIYAASSLQS				
CBH 5 light	(1)	DIQMTQSPSTLSASG-DRVAITCRA----	SQSSWLAWYQOKPGAPL--LIYKASNVQD				
CBH 7 light	(1)	DVIMTQSPSSLASVGDRTITSCRS-Q---	SISSEFNWYQOKPGKAP-LIISAASSLQS				
CBH 8 C light	(1)	EIVLTQSPATLSLSPGERATLSCRASQ---	SISRYLAWYQOKPGQAPRLLIYDTSNRAT				
CBH 8 E light	(1)	DIQMTQSPSSLSSVG--DVTITCRASQ---	TINRYLNWYQOKPGKAPKLLIYAASSLQS				
CBH 11 light	(1)	DIQMTQSPSTL-SSVGDRTITCRASQ---	SINLWLAWYQOP--KAPELLTYKTSTSES				
CBH 17 light	(1)	--SYVLTQIPVSVAPGKTARITCREPN---	IGTNSVHWYQORPGQAPVSTIYDDR--PS				
Consensus	(1)	AELTQSPATLSLSPGERATLSCRASQ	SVNKYLAWYQOKPGQAPRLLIYDASNRAT				

	CDR 3					
	(60)	60	70	80	90	112
light chain seq ID 6	(56)	GIPARFSGSGSGIDFTLTISNLEPELFAVYYCQQR---	SDWVTFGGGTKVEIK			
CBH 2 light	(55)	GIPDRFSGSGSGIDFTLTISRLEPELFAVYYCQYQ---	TSPFTFG-----			
CBH 4 B light	(55)	GVEDRFSGSGSGIDFTLTISRLEPELFAVYYCQYQ---	GSPFFGG-----			
CBH 4 D light	(57)	GVSNRFSAS-SGNTASLTISGLQAEDEADYYCSSYTNNTITPVIKGG-----				
CBH 4 G light	(57)	GVPSRFSGSGSGIDFTLTISLQPELVATYYCQKYN--	SAPFTFGP-----			
CBH 5 light	(52)	GV---SRPSGSGSGIFTLTIS-LQPDDEATYYCQYIN--	NPSGTFGQ-----			
CBH 7 light	(55)	GV-SRPSGSGSGISFTLTISLQPELFAVYYCQSY--	SPLITFGG-----			
CBH 8 C light	(57)	GIPARFSGSGSGIDFTLTISNLEPELFAVYYCQQRSNWPPALTFGG-----				
CBH 8 E light	(55)	GV-SRFSGSGSGIDFTLTISLQPDFAVYYCQSFSTISAMYTFGQ-----				
CBH 11 light	(54)	GVPSRPSGS-GSTIEFTLTISLQPDFAVYYCQHYS--	SSSWTFGQ-----			
CBH 17 light	(53)	GIPERFGSA-SGDTATLTISRVEVGDEADYSQVWNTNINHRGSSEL-----				
Consensus	(60)	GIPARFSGSGSGIDFTLTISNLEPELFAVYYCQQR	SDWVTFGGGTKVEIK			

Note:

Identical sequence: yellow background and red foreground.

Conservative sequence: light green background and blue foreground

Figure 6B.
Comparison of deduced amino acid sequences
of CBHs Light chain genes with ID 6

CDR 1
 (1) 1 14
 light chain seq ID 6 CDR 1 (1) -RASQSVNKYLA--
 CBH 2 light CDR 1 (1) -RASQSVLGYLA--
 CBH 4B light CDR 1 (1) -RASQSVSSTYVA--
 CBH 4D light CDR 1 (1) TGISSLDIGGYNEFVS
 CBH 4G light CDR 1 (1) -RASQGITNFIA--
 CBH 5 light CDR 1 (1) ---RASQSSWLA--
 CBH 7 light CDR 1 (1) --RSQSISSFIN--
 CBH 8C light CDR 1 (1) -RASQSISRYLA--
 CBH 8E light CDR 1 (1) -RASQTIINRYIN--
 CBH 11 light CDR 1 (1) -RASQSTINLWLA--
 CBH 17 light CDR 1 (1) --REFNIGTINSVH--
 Consensus (1) RASQSVNKYLA

CDR 2
 (1) 1 7
 light chain seq ID 6 CDR 2 (1) LASNRAT
 CBH 2 light CDR 2 (1) -GVSRAT
 CBH 4B light CDR 2 (1) LASIRAT
 CBH 4D light CDR 2 (1) EVSKRPS
 CBH 4G light CDR 2 (1) AASSLQS
 CBH 5 light CDR 2 (1) KASNVQD
 CBH 7 light CDR 2 (1) AASSLQS
 CBH 8C light CDR 2 (1) LASNRAT
 CBH 8E light CDR 2 (1) AASSLQS
 CBH 11 light CDR 2 (1) KTSISES
 CBH 17 light CDR 2 (1) -YLDLRPS
 Consensus (1) LASNRAT

CDR 3
 (1) 1 17
 light chain seq ID 6 CDR 3 (1) QQRSDWVT-----
 CBH 2 light CDR 3 (1) --QQYGTSPFTFG----
 CBH 4B light CDR 3 (1) ---QQYGGSPFFGG---
 CBH 4D light CDR 3 (1) SSYTNNITFVIFGG---
 CBH 4G light CDR 3 (1) --QKYNAPFTFGP---
 CBH 5 light CDR 3 (1) --QYNNFSGTIFGQ---
 CBH 7 light CDR 3 (1) --QCSYSPILLTFGG---
 CBH 8C light CDR 3 (1) QQRSNWPPALTFGG---
 CBH 8E light CDR 3 (1) QCSFSTSAMVTFGQ---
 CBH 11 light CDR 3 (1) --QHYSSSSWIFGQ---
 CBH 17 light CDR 3 (1) --QVNNNTNNHRGSSEL
 Consensus (1) QQRSDWVT

Figure 7A.
Comparison of deduced amino acid sequences
of CBHs Light chain genes with ID 7

	CDR 1					CDR 2
	(1)	10	20	30	40	58
light chain seq ID 7	(1)	-AELTQSPGTL	SLSPGERATL	SCGASQSVRSNY	-LAWYQOKPGQ	APRLLIYGVSSRAT
CBH 2 light	(1)	EIVLTQSPGTL	-LSPGERATL	SCRASQSVLSG	-YLAWYQOKPGQ	APRLLIYGVSSRAT
CBH 4 B light	(1)	--ESVTQSGTL	SLSPGERATL	SCRASQSVSSTY	-VAWYQOKPGQ	APRLLIYGVSSRAT
CBH 4 D light	(1)	-QSALTQEPASV	SGSPGQSITIS	CTGTSSDIGGYN	FVSWYQYFDPKAP	-VVIYEVSKRPS
CBH 4 G light	(1)	DIQMTQSPSSLS	ASVGDRTVITTC	RASQGITDN-F	-LAWYQOKPGK	VEKLLIYAASSLQS
CBH 5 light	(1)	DIQMTQSPSTLS	ASG-DRVAITCR	ASQSSWL----	AWYQOKPGAPL	--LIYKASNVQD
CBH 7 light	(1)	DVLTMTQSPSSLS	ASVGDRTVITTC	RASQSISF----	LNWYQOKPGAP	-LLISAASSLQS
CBH 8 C light	(1)	EIVLTQSPATLS	SLSPGERATL	SCRASQSISR-Y	-LAWYQOKPGQ	APRLLIYFDTSNRAT
CBH 8 E light	(1)	DIQMTQSPSSLS	SSVG--DVITTC	RASQITNR-Y	-LNWYQOKPGK	APKLLIYAASSLQS
CBH 11 light	(1)	DIQMTQSPSTL	-SSVGDRTVITTC	RASQSINL--	WLAWYQQP--	KAPELLITKTSTSES
CBH 17 light	(1)	--SYVLTQTPV	SVAPGKTARITC	REFNIGTN--	SVHWQQRRPGQ	APVSIYYDDR--PS
Consensus	(1)	AELTQSPGTL	SLSPGERATL	SCGASQSVRSNY	LAWYQOKPGQ	APRLLIYGVSSRAT

	CDR 3					
	(59)	59	70	80	90	109
light chain seq ID 7	(57)	GIFLRFSGSGSG	GILFILTISRL	EEFELFAVYYCC	QYCGSSERIFG	QGKLEIK
CBH 2 light	(55)	GIFLRFSGSGSG	GILFILTISRL	EEFELFAVYYCC	QYCGSSERIFG	---
CBH 4 B light	(55)	GIFLRFSGSGSG	GILFILTISRL	EEFELFAVYYCC	QYCGSSERIFG	---
CBH 4 D light	(57)	GVSINR-FSASS	GNIASLTISGL	CAELEALYYCS	SYINNITFVIFG	---
CBH 4 G light	(57)	GVESRFSGSGSG	GILFILTISRL	EEFELFAVYYCC	QYCGSSERIFG	---
CBH 5 light	(52)	GV--S-RFSGSG	GIFILTISRL	EEFELFAVYYCC	QYCGSSERIFG	---
CBH 7 light	(55)	GV-SRFSGSGSG	GILFILTISRL	EEFELFAVYYCC	QYCGSSERIFG	---
CBH 8 C light	(57)	GIFLRFSGSGSG	GILFILTISRL	EEFELFAVYYCC	QYCGSSERIFG	---
CBH 8 E light	(55)	GV-SRFSGSGSG	GILFILTISRL	EEFELFAVYYCC	QYCGSSERIFG	---
CBH 11 light	(54)	GVESRFSGSGSG	-TEFILTISRL	EEFELFAVYYCC	QYCGSSERIFG	---
CBH 17 light	(53)	GIFLRFSGSGSG	GILFILTISRL	EEFELFAVYYCC	QYCGSSERIFG	---
Consensus	(59)	GIFLRFSGSGSG	GILFILTISRL	EEFELFAVYYCC	QYCGSSERIFG	QGKLEIK

Note:

Identical sequence: yellow background and red foreground.
 Conservative sequence: light green background and blue foreground

Figure 7B.
Comparison of deduced amino acid sequences
of CBHs Light chain genes with ID 7

CDR 1

	(1)	<u>1</u>	14
light chain seq ID 7 CDR 1	(1)	GASQSVRSNYLA---	
CBH 2 light CDR 1	(1)	-RASQRLVGLA---	
CBH 4B light CDR 1	(1)	RASQSVSSTIYA---	
CBH 4D light CDR 1	(1)	TGTSSDIGGYNFVS	
CBH 4G light CDR 1	(1)	-RASQGIDNFLA---	
CBH 5 light CDR 1	(1)	---RASQSSWLA---	
CBH 7 light CDR 1	(1)	--RSQSLSSFIN---	
CBH 8C light CDR 1	(1)	-RASQSISRNYLA---	
CBH 8E light CDR 1	(1)	-RASQTINRYIN---	
CBH 11 light CDR 1	(1)	-RASQSINLWLA---	
CBH 17 light CDR 1	(1)	--REFNIGTNSVH-	
Consensus	(1)	GASQSVRSNYLA	

CDR 2

	(1)	<u>1</u>	7
light chain seq ID 7 CDR 2	(1)	GVSSRAT	
CBH 2 light CDR 2	(1)	-GVSRAT	
CBH 4B light CDR 2	(1)	DASIRAT	
CBH 4D light CDR 2	(1)	EVSKRPS	
CBH 4G light CDR 2	(1)	AASSLQS	
CBH 5 light CDR 2	(1)	KASNVQD	
CBH 7 light CDR 2	(1)	AASSLQS	
CBH 8C light CDR 2	(1)	DTSNRAT	
CBH 8E light CDR 2	(1)	AASSLQS	
CBH 11 light CDR 2	(1)	KTSTSES	
CBH 17 light CDR 2	(1)	-YDLRPS	
Consensus	(1)	GVSSRAT	

CDR 3

	(1)	<u>1</u>	15
light chain seq ID 7 CDR 3	(1)	QCYGSSFRT-----	
CBH 2 light CDR 3	(1)	QCYGTSFFIFG----	
CBH 4B light CDR 3	(1)	QCYGGSFFFGG----	
CBH 4D light CDR 3	(1)	SSYINNITFVIFGG-	
CBH 4G light CDR 3	(1)	--CKYNSAPFTFGF-	
CBH 5 light CDR 3	(1)	--QYNNFSGIFGQ-	
CBH 7 light CDR 3	(1)	--QCSYSPLLIFGG-	
CBH 8C light CDR 3	(1)	QCRSNWFFALIFGG-	
CBH 8E light CDR 3	(1)	QCSFSTISAMYTFGQ-	
CBH 11 light CDR 3	(1)	--CHYSSSSWIFGQ-	
CBH 17 light CDR 3	(1)	QVWNNINNHGSSSEL	
Consensus	(1)	QCYGSSFRT	

Figure 8A.
Comparison of deduced amino acid sequences
of CBHs Light chain genes with ID 8

		CDR 1	CDR 2
	(1) 1 10 20 30 40 59		
light chain seq ID 8	(1) -AELTQSPATLSVSPGERASLSCRASQ---	SVGNNLAWYQOKPGQAPRLITYGGNIRAT	
CBH 2 light	(1) EIVLTQSPGTL-LSPGERATLSCRASQ---	RVLGYLAWYKQKPGQAPRLITYGVS-RAT	
CBH 4 B light	(1) --ESVTQSGTILSLSPGERATLSCRASQS--	VSSTYVAWYQOKPGQAPR-LLYDASIRAT	
CBH 4 D light	(1) -QSALTQPASVSGSPGQSITITSCGTSSDIGGYNFVSWYQYDPKAPV--	VIYEVSKRPS	
CBH 4 G light	(1) DIQMTQSPSSLSASVGDVTTTCRASQ---	GIDNPLAWYQOKPGKVPKLLIYAASSLQS	
CBH 5 light	(1) DIQMTQSPSTLSASG-DRVATTCRA----	SQSSWLAWYQOKPGAFL--LTYKASNVQD	
CBH 7 light	(1) DVIMTQSPSSLSASVGDVTTISCRS-Q---	SISSTFNWYQOKPGKAP-LLISAASSLQS	
CBH 8 C light	(1) EIVLTQSPATLSLSPGERATLSCRASQ---	SISRYLAWYQOKPGQAPRLITYEDTSNRAT	
CBH 8 E light	(1) DIQMTQSPSSLSVSG--DVTTTCRASQ---	TINRYLNWYQOKPGKAPKLLIYAASSLQS	
CBH 11 light	(1) DIQMTQSPSTL-SSVGDVTTTCRASQ---	SINLWLAWYQOP--KAPPELLIYKTSTSES	
CBH 17 light	(1) --SYVLTQTPVSVAPGKTARITCREPN--	IGTNSVHWFOQRPGQAPVSIYYDDR--PS	
Consensus	(1) AELTQSPATLSVSPGERASLSCRASQ	SVGNNLAWYQOKPGQAPRLITYGGNIRAT	

		CDR 3
	(60) 60 70 80 90 100 110	
light chain seq ID 8	(56) GTFLEFSGSGSGTEFILTISSLQSEIFAIVYFCCHYSTIWFITFGGCIKVEFK	
CBH 2 light	(55) GTFLEFSGSGSGTDFILTISRLEFEDFA-YYCCYXGISFFTEG-----	
CBH 4 B light	(55) GVFLRFSGGSGGIDFILTISRLEFEDFAVYYCCYGGSEFFFG-----	
CBH 4 D light	(57) GVSNR-FSASSENTIASLTISGLCAFEALFYCCSYINNITFVIFGG-----	
CBH 4 G light	(57) GVFSRFSGSGSGIDFILTISSLQPELVATYYCCYNSAFFTEGF-----	
CBH 5 light	(52) GV--S-RFSGSGSIFILTISL-LQELLEATYYCCYNNFSGIFGQ-----	
CBH 7 light	(55) GV-SRFSGSGSGISFILTISSLQPELEATYYCCQSYSELTIFGG-----	
CBH 8 C light	(57) GTEARFSGSGSGIDFILTISNLEFEDFAVYYCCQSRNWFEEALTFGG-----	
CBH 8 E light	(55) GV-SRFSGSGSGIDFILTISSLQF-LEATYYCCQSFSTISAMYIFGQ-----	
CBH 11 light	(54) GVFSRFSGSGS-TEFILTISSLQF-LEATYYCCFYSSSSWIFGQ-----	
CBH 17 light	(53) GTFER-FGSASGLTALTISRVEVGLEALYSCQVWNTNNHRGSSEL----	
Consensus	(60) GTFLEFSGSGSGTEFILTISSLQSEIFAIVYFCCHYSTIWFITFGGCIKVEFK	

Note:

Identical sequence: yellow background and red foreground.

Conservative sequence: light green background and blue foreground

Figure 8B.
Comparison of deduced amino acid sequences
of CBHs Light chain genes with ID 8

CDR 1
 (1) 1 14
 light chain seq ID 8 CDR 1 (1) -RASQSVGNLA--
 CBH 2 light CDR 1 (1) -RASQVIGYLA--
 CBH 4B light CDR 1 (1) -RASQSVSSTIYA-
 CBH 4D light CDR 1 (1) TGISSDIGGYNFVS
 CBH 4G light CDR 1 (1) -RASQGIENFLA--
 CBH 5 light CDR 1 (1) -RASQSSWLA----
 CBH 7 light CDR 1 (1) --RSQSISSFIN--
 CBH 8C light CDR 1 (1) -RASQSIISRYLA--
 CBH 8E light CDR 1 (1) -RASQTIINRYLN--
 CBH 11 light CDR 1 (1) -RASQSIINLWLA--
 CBH 17 light CDR 1 (1) --REFNIGINSVH-
 Consensus (1) RASQSVGNLA

CDR 2
 (1) 1 7
 light chain seq ID 8 CDR 2 (1) GGNIRAT
 CBH 2 light CDR 2 (1) -GVSRAT
 CBH 4B light CDR 2 (1) DASIRAT
 CBH 4D light CDR 2 (1) EVSKRPS
 CBH 4G light CDR 2 (1) AASSLQS
 CBH 5 light CDR 2 (1) KASNVQD
 CBH 7 light CDR 2 (1) AASSLQS
 CBH 8C light CDR 2 (1) DTSNRAT
 CBH 8E light CDR 2 (1) AASSLQS
 CBH 11 light CDR 2 (1) KTSTSES
 CBH 17 light CDR 2 (1) -YDDRPS
 Consensus (1) GGNIRAT

CDR 3
 (1) 1 15
 light chain seq ID 8 CDR 3 (1) CHYSTWFLT-----
 CBH 2 light CDR 3 (1) CCYGISFFTFG----
 CBH 4B light CDR 3 (1) CCYGGSEFFFG----
 CBH 4D light CDR 3 (1) SSYINNITFVIFGG-
 CBH 4G light CDR 3 (1) CKYNSAEFFTFGF---
 CBH 5 light CDR 3 (1) CYNNFSGTFGQ---
 CBH 7 light CDR 3 (1) --CCSYSPLITFGG-
 CBH 8C light CDR 3 (1) CCRSNWFPALTFGG-
 CBH 8E light CDR 3 (1) CCSEFTISAMYTFGQ-
 CBH 11 light CDR 3 (1) CHYSSSSWIFGQ---
 CBH 17 light CDR 3 (1) CVVNNINNHRSSEL
 Consensus (1) CHYSTWFLT

Figure 9B.
Comparison of deduced amino acid sequences
of ID's light chain genes

	CDR 1					CDR 2	
	(1)	1	10	20	30	40	56
light chain seq ID 5	(1)	AELTQSPG	ILSLSPGERAT	ILSCRASQSVSSNYLAWYCCRF	GCAPRL	ITYGASSRAT	
light chain seq ID 7	(1)	AELTQSPG	ILSLSPGERAT	ILSCGASQSVRSNYLAWYCCRF	GCAPRL	ITYGVSSRAT	
light chain seq ID 6	(1)	AELTQSPAT	ILSLSPGERAT	ILSCRASQSVN-KYLAWYCCRF	GCAPRL	ITYTASNRAI	
light chain seq ID 8	(1)	AELTQSPAT	ILSVSPGERAS	ILSCRASQSVG-NNLAWYCCRF	GCAPRL	ITYGGNIRAI	
Consensus	(1)	AELTQSPG	ILSLSPGERAT	ILSCRASQSVSSNYLAWYCCRF	GCAPRL	ITYGASSRAT	

	CDR 3					
	(57)	57	70	80	90	107
light chain seq ID 5	(57)	GIFLRFSGSGSGT	DFILTIISRLEFELFAVYYCCLYGNSRWTF	CGGCTKVEIK		
light chain seq ID 7	(57)	GIFLRFSGSGSGT	DFILTIISRLEFELFAVYYCCQYGSSE	RTFCGCTKLEIK		
light chain seq ID 6	(56)	GIFARFSGSGSGT	DFILTIISNLEFELFAVYYCCCR-SLWVIF	CGGCTKVEIK		
light chain seq ID 8	(56)	GIFLRFSGSGSGT	EFILTIISLQSEDFAVYFCCHYSTWELTF	CGGCTKVEIK		
Consensus	(57)	GIFLRFSGSGSGT	DFILTIISRLEFELFAVYYCCLYGNSRWTF	CGGCTKVEIK		

CDR region comparison between different IDs

	CDR 1	
	(1)	12
light chain seq ID 5 CDR 1	(1)	RASQSVSSNYLA
light chain seq ID 7 CDR 1	(1)	GASQSVRSNYLA
light chain seq ID 6 CDR 1	(1)	RASQSVNKYLA-
light chain seq ID 8 CDR 1	(1)	RASQSVGNILA-
Consensus	(1)	RASQSVSSNYLA

	CDR 2	
	(1)	8
light chain seq ID 5 CDR 2	(1)	YGASSRAT
light chain seq ID 6 CDR 2	(1)	-DASNRAT
light chain seq ID 7 CDR 2	(1)	-GVSSRAT
light chain seq ID 8 CDR 2	(1)	-GGNIRAT
Consensus	(1)	YGASSRAT

	CDR 3	
	(1)	11
light chain seq ID 5 CDR 3	(1)	CLYGNSRWI--
light chain seq ID 6 CDR 3	(1)	--CCRSCLWVI-
light chain seq ID 7 CDR 3	(1)	CCYGSSEFT--
light chain seq ID 8 CDR 3	(1)	--CHYSTWELT
Consensus	(1)	CLYGNSRWI

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Note:

Identical sequence: yellow background and red foreground.

Conservative sequence: light green background and blue foreground

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Identical sequence: yellow background and red foreground.
Conservative sequence: light green background and blue foreground